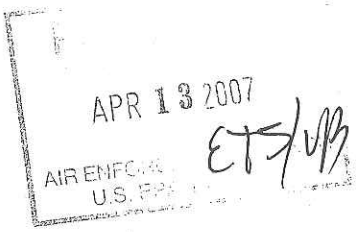
Branch

integrys™



Integrys Energy Group, Inc.
700 North Adams Street
P.O. Box 19001
Green Bay, WI 54307-9001
www.integrysgroup.com

April 11, 2007

Mr. George Czerniak
Chief Air Enforcement and Compliance Assurance Branch
USEPA-Region V (AE-17J)
77 W Jackson Blvd
Chicago, Illinois 60604-3590

Subject: NSPS Applicability Determination– Treatment System
Winnebago Landfill and Winnebago Energy Center, LLC
Facility ID No. 201801AAF and 201801AAN

Dear Mr. Czerniak:

The Winnebago Landfill owned and operated by Winnebago Reclamation Services is subject to the New Source Performance Standards (NSPS) for Municipal Solid Waste Landfills, 40 CFR Part 60 Subpart WWW. Winnebago Landfill also operates a landfill gas collection and control system. Currently, all colleted landfill gas is routed to several flares for destruction. Winnebago Energy Center, LLC (a separate entity) has applied for a construction permit to Illinois Environmental Protections Agency (IEPA) to use collected landfill gas to generate electricity using engines. Collected landfill gas will be sent to an energy recoveryplant, where the landfill gas will be treated according to USEPA guidelines and subsequently combusted in engines for beneficial use. Winnebago Energy Center, LLC owns and operates the engines, landfill gas treatment system, and energy recovery facility.

Winnebago Landfill and Winnebago Energy Center, LLC are requesting an NSPS applicability determination on whether the processes thatwould occur at the energy recovery plant prior to combustion of the gas in the engines meet the requirements for a "treatment system" in 40 CFR 60.752(b)(2)(iii)(C). If the proposed treatment system meet the USEPA guidelines, the engines combusting the treated gas at the energy recovery facility should not be subject to the control requirements of 40 CFR 60.752(b)(2)(iii)(B) and associated monitoring, record keeping, and reporting for such control devices

Pursuant to discussions with the USEPA and IEPA, there have been several recent applicability determinations of this nature due to the EPA's proposed definition for "treatment system" contained in a May 23, 2002 Federal Register Notice of proposed rulemaking. [See 67 FR 36480]. Specifically,the USEPA has proposed to add a definition for treatment system to the Landfill NSPS as follows:

4/18/07 assigned to Lynne Roberts
201801AAN - source does not exist

"Treatment system means a system thatfilters, de-waters and compresses landfill gas."

In the preamble to the proposed regulations, the USEPA includes the following statements about the proposed definition of "treatment system":

> "At a minimum, the system must filter landfill gas using a dry filter or similar device (e.g., impaction, interception or diffusion device). The filter should reduce particulate matter in the gas stream. This will prolong the life of the combustion device and decrease the buildup of material on combustion device internals, which will support good combustion. Good combustion is essential to ensuring the proper destruction of NMOC. In addition, the system must de-water landfill gas using chillers or other dehydration equipment. The de-watering equipment should reduce moisture content of the gas, which will maintain low water content in the gas and will prevent degradation of combustion efficiencies. Finally, the system must compress landfill gas using gas blowers or similar devices. Compression should further reduce the moisture content of the gas and raise gas pressure to the level required by the end use combustion device."

Winnebago Landfill and Winnebago Energy Center, LLC believe that the treatment of the landfill gas in the energy recovery facility prior to its combustion in the engines does indeed meet the EPA's proposed definition of "treatment system". Prior to the collected landfill gas entering the engines, the landfill gas passes through a treatment system involving a knock-out pot to remove water, a positive displacement blower, a heat exchanger, a dehumidifier/re-heater, and a two-stage 1.0 micron coalescent filter. The attached process flow diagram includes a complete layout of the gas recovery plant from the time the raw landfill gas enters from the wellfield, up to it's combustion in the engines. As indicated in the diagram, the recovery plant does contain filtration, dewatering and compression equipment.

We would appreciate your prompt response to this applicability determination request. It is our understanding that if a landfill gas treatment system at the energy recovery facility is indeed determined to meet the "treatment system" definition, the engines would not be subject to either the Municipal Solid Waste Landfill NSPS or the NESHAP for Municipal Solid Waste Landfills, 40 CFR 63 Subpart AAAA requirements. The collection system (and enclosed or open flares burning untreated landfill gas) and the landfill gas treatment system would still be required to have a Start-up, Shutdown, Malfunction plan (SSM plan).

Please contact Mitch Lagerstrom at (920) 433-5500 if you have any questions regarding this applicability determination request.

Sincerely,

Winnebago Energy Center, LLC

Mitch Lagerstrom
Integrys Energy Group

Attachments: April 22, 2004 NSPS Applicability Determination

Fuel Gas Compressor Flow Diagram

cc: Jeff Gahris, Region 5 USEPA
IEPA – Compliance (MC 40)
Mike Davidson – IEPA Permits
Kunj Patel – IEPA Permits
IEPA, Air Regional Field Office– Peoria, IL
Tom Hilbert – Winnebago Reclamation Services
Bridgette Chapman, PE, Cornerstone Environmental Group, LLC
Charles Koontz- Integrys Energy Services

ATTACHMENTS

April 22, 2004 Region V NSPS Applicability Determination
Fuel Gas Compressor Flow Diagram

Control Number: 0400032

Category: NSPS
Region: Region 5
Date: 04/22/2004
Title: Definition of Landfill Gas Treatment
Recipient: Daniel Erni
Author: George Czerniak
Comments: See related MACT determination filed as ADI Control No. M040028. See also the comparable determination affecting a different facility, filed as ADI Control No. 0400028.

Subparts: Part 60 WWW Municipal Solid Waste Landfills
References: 60.752(b)(2)(iii)(C)

Abstract:

Q1: What is the definition of "treatment" under NSPS subpart WWW at 60.752(b)(2)(iii)(C)?

A1: EPA has determined that compression, de-watering, and filtering the landfill gas down to at least 10 microns is considered "treatment" under NSPS Subpart WWW, 40 CFR Section 60.752(b)(2)(iii)(C). EPA made the same determination previously in ADI Control Nos. 0200019, 0200028, and 0300121.

Q2: Do the municipal solid waste landfill regulations apply to the gas once treatment has occurred?

A2: No. Once landfill gas has been treated, NSPS subpart WWW no longer applies to the treated gas. However, all gas before treatment, and respective control equipment, would be subject.

Letter:

(AE-17J)

Daniel C. Erni, PE
Environmental Engineer
Tazewell Recycling and Disposal Facility
3550 East Washington Street
East Peoria, Illinois 61611

Re: Clarification of Landfill Gas Treatment NSPS Exemption and NESHAP exemption for Tazewell Recycling and Disposal Facility (RDF), operated by Waste Management of Illinois, Inc.

Dear Mr. Erni:

Thank you for your March 12, 2004, letter to the U.S. EPA asking for clarification regarding the gas treatment exemption for Tazewell Recycling and Disposal Facility (RDF) located in East Peoria, Illinois. The landfill gas from Tazewell RDF is sent to an energy recovery plant where the gas is combusted in reciprocating internal combustion (IC) engines for beneficial use. Tazewell RDF is subject to the New Source Performance Standards (NSPS) for Municipal Solid Waste Landfills (40 CFR Part 60, Subpart WWW) and the National Emission Standards for Hazardous Air Pollutants

(NESHAP): Municipal Solid Waste Landfills (40 CFR Part 63, Subpart AAAA). In your letter, you request clarification that once treated per 40 CFR 60.752(b)(2)(iii)(C) the landfill gas is no longer subject to the requirements under NSPS and NESHAP.

Your letter indicates that prior to use as fuel in the IC engines, the landfill gas is first 1) filtered through a mesh-pad scrubber where liquids are knocked out, 2) compressed up to the working pressure of the engines and heated to above the dew point, 3) cooled in an air-exchange cooler, 4) filtered down through a 5-micron filter, 5) sent through a gas/gas heat exchanger, and 6) reheated.

The regulations at 40 CFR Part 60.752(b)(2)(iii) state that collected landfill gas is required to be routed to a control system that complies with the requirements in either: A) an open flare; B) a control system or enclosed combuster designed to reduce NMOC; or C) a treatment system that processes the collected gas for subsequent sale or use. The landfill gas applicable to Tazewell RDF has been treated for sale or use under 60.752(b)(2)(iii)(C). U.S. EPA has made several determinations that compression, de-watering, and filtering the landfill gas down to at least 10 microns is considered treatment for the purposes of 60.752(b)(2)(iii)(C).

Your letter also asks for clarification that once the landfill gas is treated pursuant to 60.752(b)(2)(iii)(C), that the gas is no longer subject to the requirements found under the NSPS and NESHAP. U.S. EPA has determined that once the landfill gas is treated, the facilities that buy or use the treated gas have no further obligations related to the NSPS. Therefore, once the gas has been treated and sent to the IC engines, the treated gas is no longer subject to the requirements of the NSPS and, in turn, the NESHAP.

However, emissions from any atmospheric vent from the gas treatment system, including any compressor, are subject to the requirements of 40 CFR 60.752(b)(2)(iii)(A) and (B), as well as the NESHAP. This does not include exhaust from an energy recovery device.

This determination was based on previous determinations and through coordination with OAQPS and OECA. If you have any questions, feel free to contact Lynne Roberts, of my staff, at (312) 886-0250.

Sincerely yours,

George T. Czerniak, Chief
Air Enforcement and Compliance Assurance Branch

cc: Julie Armitage, Acting Manager
Compliance and Enforcement Section
Illinois Environmental Protection Agency

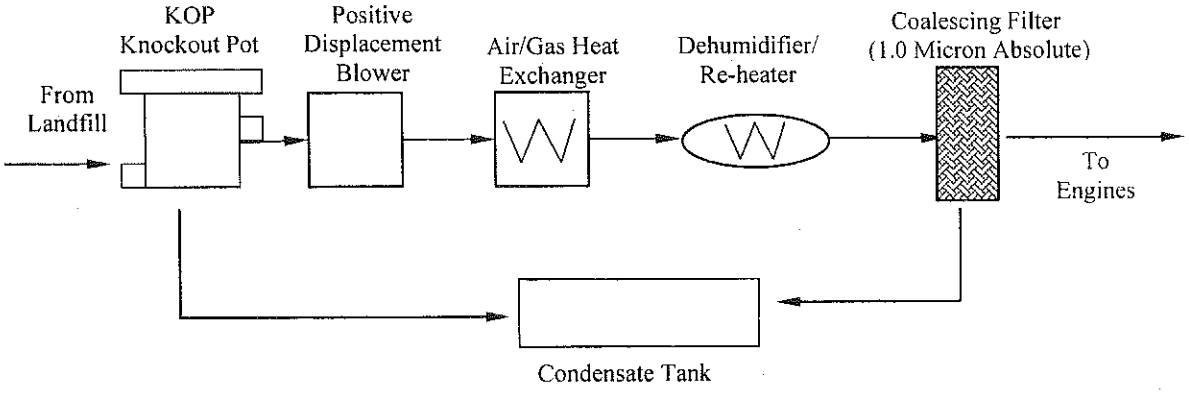
Ken Hustvedt, OAQPS
Research Triangle Park

JoLynn Collins, OAQPS
Research Triangle Park

Zofia Kosim, OECA
USEPA Headquarters

==========

FUEL GAS COMPRESSOR FLOW DIAGRAM



PROCESS DESCRIPTION

A Knockout Pot is used to remove water vapor and particulates.

The LFG is then compressed by a positive displacement blower and then passes through the air-to-gas heat exchanger and a Dehumidifier/Re-heater.

The compressed LFG passes through the air-to-gas heat exchanger and Dehumidifier/Re-heater to reduce humidity & water vapor.

Finally particulates are removed by a 1 micron coalescent filter.

All condensate produced by the process is disposed of by approved methods.